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Britain's £15 billion broadband black hole

Britain's next-generation broadband is in danger of stalling on the grid and leaving consumers in a surfing slow lane if politicians and industry heavyweights can't agree on who should pay for a new infrastructure to replace our ageing copper network.

Users could see broadband speeds actually slowing as more broadband consumers clog available bandwidth by downloading video and rich media.

Senior government and industry officials are involved in crucial talks over the future of broadband in Britain, which ministers see as critical to the economy and user satisfaction.

"Ultra-fast broadband will be a key technology that will allow our businesses to innovate, grow and create wealth," said UK competitiveness minister Stephen Timms after a meeting in which no decision on future technologies was made. "If we delay in putting this new network in place, it could be a barrier to the future success of our economy."

Nevertheless, delay is exactly what is on the cards as key players failed to agree on how we will receive our broadband in the future.

Experts believe that the best way to provide high-speed access for all is to build a new infrastructure

using fibre-optic cable to every home or at least every street corner in Britain. Fibre is capable of carrying far more information, and could deliver high-definition video on demand, for example.

The problem is that senior BT officials believe the new infrastructure would need a cash injection of £15-£20 billion, to which no-one is prepared to commit. A BT spokesperson said that the company wouldn't build a new network until it had seen evidence that consumers actually want higher speed and there was a business case for building it.

"At the moment the vast majority of people have fast enough speeds for what they want to do. There just isn't the demand for 50Mbit/s or 100Mbit/s connections," the spokesperson said.

His opinion is in stark contrast to a recent uSwitch report, however, which found that nearly four million broadband subscribers were unhappy with the speed of their internet connection. According to uSwitch, the complaint stems from the fact that users pay £213 per year on average for a 5Mbit/s connection but in reality receive speeds of just 3Mbit/s.

"The speeds available at the moment are sufficient for most of today's applications," said

Ian Fogg, broadband analyst at Jupiter Research, "but as demand grows and new services come online, consumers may want faster speeds, and they may be disappointed."

The timing of any upgrade will be crucial. The BT official told *Computer Shopper* that building a new home fibre-optic network would take "about ten years", which is a lifetime in internet terms. Unless we make a start on a new network soon, consumers could find that they have to wait for years to catch up with new technologies.

"If we wait until we actually need the extra bandwidth before we do something about this and then have to wait 10 years, we are screwed," said Andrew Ferguson, networking expert at ThinkBroadband.com.



▲ Upgrades will be needed for next-generation broadband

ISPs fail customers – again

ISPs are still letting consumers down when it comes to customer service, according to a report by research company JD Powers.

The survey found that spending long periods on hold while waiting to speak to customer services was trying consumers' patience, and that complaints about ISP performance were soaring.

"Call waiting times continue to increase when customers contact their ISP, with customers now waiting an average of 17 minutes before initially

speaking with a representative," said Caspar Tearle, director of service industries research at JD Power. "Complaints to customer service departments have risen again in 2007, and now outnumber customer service-related questions."

The problem is exacerbated by pricy premium-rate calls racking up phone bills while customers are on hold. "With customers of most suppliers paying from their own pocket for these calls, these high levels of complaints come as no surprise," Tearle said.

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Number system rings changes for VoIP

Internet telephony is to get a shot in the arm that could bring free calls to millions of consumers when a new numbering system for calls placed over the web comes into effect. The new telephone number mapping registry, Enum, will act like a directory of internet phone numbers, guiding calls between internet-based networks and switching calls to and from landlines.

The changes could be as significant for VoIP as enabling cross-network text messaging was for the mobile phone industry. They simplify the frustratingly segmented market in which subscribers can only call other users on the same VoIP provider or landlines, which comes at an additional cost.

"Lots of consumers already use Skype and other VoIP systems, but the problem is that you can only talk to other Skype users, or people using the same VoIP provider," said

Jay Daley of Nominet, which administrates .co.uk addresses and will also run Enum.

The registry could force VoIP providers to work more closely together, because companies that do not sign up to Enum will be left out.

"The setup would mean you can go to a VoIP company and get a proper number which anyone can use and you could dial any other competitor who wishes to participate for free," said Daley.

"VoIP companies have until now worked mostly in isolation, but the little islands of providers are going to have to get themselves connected or risk losing their business to companies that are."

The registry is designed to work in a similar manner to the email Domain Name System that finds the location of your email server, and is expected to go live this spring.

Enum will even support mobile phone numbers, which could provide a boost for VoIP on

mobile handsets with built-in WiFi or 3G. Callers could use their mobile phone from any wireless hotspot, for example, to call a friend's VoIP phone number for free. Freephone 0800 numbers are unlikely to be supported, though.

The move is expected to make VoIP a serious option, as it gives some structure to this currently unruly sector, which has mostly been the preserve of tech-heads.

"There need to be some rules and regulations in this area because VoIP needs to grow up, and it will because soon it will simply be part of mainstream telephony," said Ajaz Ahmed, founder of Freeserve and former chairman of VoIP company Callserve.

"VoIP should be like mobiles, where you can walk into a shop, buy a handset and it just works – it comes with a number so you are ready to go," said Ahmed. "The system needs to be less geeky and more user-friendly."



▲ Internet phone calls should soon be more straightforward

Shake-up for 999 calls

In another triumph for web telephony, regulator Ofcom says it will force VoIP companies to connect to the emergency services.

Until now, internet phone companies have had no obligation to connect 999 calls, but the new rules force any company that allows customers to call landlines to provide emergency calls.

"As new voice services develop and become more mainstream, regulation must evolve too," said Ofcom chief executive Ed Richards. "In the future, consumers will be confident that if they can make calls to ordinary national numbers using their VoIP service then they will be able to call 999 or 112 in an emergency."

The decision follows an Ofcom survey that found 78 per cent of VoIP customers didn't know they couldn't call 999, a situation which posed a danger to health.

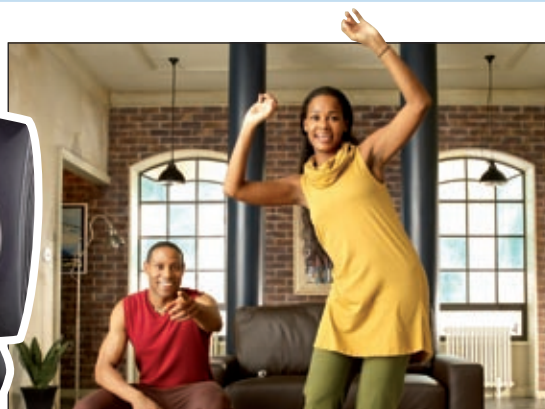
Putting Wii into PC

The success of Nintendo's Wii and PlayStation's EyeToy has sparked a copycat concept for computers that could bring about a revolution for gamers.

3DV Systems has launched a 3D camera that senses motion. The company says that it is sensitive enough to control characters in games or to navigate the web at the flick of the wrist.

"We have taken 3D imaging technology, originally used in advanced defence systems, and transformed it into an affordable consumer device," says 3DV chief executive Zvika Klier. "You can use your body freely to control games, or to navigate through menus."

Initial games include boxing, where the player shadow-boxes in front of the display, and flight simulator shoot-'em-ups.



▲ The 3DV brings motion control to the computer

Children 'still at risk online,' says charity

Children's charities say new moves aimed at protecting youngsters online are inadequate, and that retailers and manufacturers have a responsibility to pre-install or preconfigure software on new computers to keep children safe.

The allegation comes in the wake of new moves from the PC Association, which now insists its members – who are mostly small, independent retailers – should explain the dangers of children surfing unsupervised to parents when they buy a new PC.

"We've instructed our members that, when they sell into any environment where it is likely that a computer will be used by young children and other vulnerable people, they must give appropriate advice with regard to safe internet use," said PCA chief executive Keith Warburton. Smaller traders, he added, were better equipped to supply information than high street vendors, "where advice is often not very good".

Despite welcoming the changes to the PC Association's code, the NSPCC said it wanted further action, with machines sold to families being "access throttled" before they leave the store.

"We think that machines sold to families should be more tightly controlled before they leave the shop," said Zoe Hilton, NSPCC policy adviser. "In many cases it's already there in the software, but it's either not turned on or is left at a low level of protection, and that's just wrong."



▲ Open configuration on new PCs often leaves children at risk

A nasty kettle of phish

Online banking customers and other e-commerce consumers have been warned to take extra care as phishing attacks grow more sophisticated and almost undetectable.

The warning comes from Georgia Institute of Technology researchers, who have discovered a new, virtually silent form of skulduggery that attacks the DNS servers that act as the web's phone directory.

"This is a crime that hardly anyone sees," said David Dagon, a researcher at Georgia Tech who worked on the paper. "The host servers basically ignore what directions you ask for and send you wherever they want you to go. That could be an advertising site or something more malicious."

"We have seen an important development in how attackers are using internet resources: the creation of malicious DNS resolution paths," said Dagon. "In this growing form of attack, victims are forced to use rogue DNS servers for all sites. We found dozens of viruses that corrupt resolution paths, and noted that hundreds of URLs performed drive-by alterations of host DNS settings."

The attack works by compromising the "open recursive" DNS servers that turn the addresses that users type into a browser, such as www.computershopper.co.uk, into the numerical IP addresses that map the internet.

The researchers claim that of 17 million such DNS servers, nearly 70,000 are behaving maliciously. These servers are forming a "secret authority" that could undermine the web by eroding trust among surfers. However, security experts contest the number of infected servers.

Once a small piece of the malware has been left on a victim's computer, all his internet surfing would be

directed through the hacker's DNS server, giving the criminals complete control of all surfing activity.

Once infected, computer users find that addresses typed in could lead them anywhere the criminal chooses. However, experts say that phishers would make browser performance appear normal, directing surfers to kosher requested pages until they typed in a secure address – such as a bank, for example – when the criminal would send the surfer to a copycat page to harvest passwords and other account details.

Security experts confirm the problem is on the rise and, as usual, suggest that keeping anti-virus software up to date should protect surfers.

"The problem of malware and phishing working in tandem has been on the increase for a year or so, and this is just another example," said Kevin Hogan, director of security response at Symantec. "You would hope that anti-virus software would spot the malware on the way in, because it's unlikely a firewall would stop your computer accessing rogue servers."



▲ Phishing attacks are getting more sophisticated and can redirect browsers to rogue sites

USB graphics for wireless displays

A graphics card on a USB chip could soon mean computer users can kiss goodbye to wires when they want to connect to a monitor, either from their desktop or a laptop.

DisplayLink and Alereon have announced a reference design – from which manufacturers can build components – for a wireless USB display adaptor that plugs into a laptop and acts as a graphics bridge to nearby monitors.

The companies say the kit is like an enhanced wireless mouse and keyboard kit, delivering fast transfer speeds using ultra-wideband technology, and is capable of driving video-intensive gaming as well as standard office applications.

"A display connected using this wireless reference design feels and looks to a user exactly like a wired

display," said Hamid Farzaneh, DisplayLink president and CEO. "We've seen how popular wireless mice and keyboards are, and this is another way of bridging the gap between user and machine."

The design uses a standard wireless USB input and output that can display screen resolutions of up to 1,680x1,050 at 16.7 million colours with smooth DVD video playback and fast response times, the companies say.

It's unclear when UK consumers will be able to get their hands on the technology, because as yet the wireless USB connection is not licensed to work in the UK. All wireless devices need to be cleared by Ofcom – as with FM MP3 transmitters – and any company planning to sell the product in the UK would have to surmount those obstacles.

Timeline Twenty-five years of groovy graphics

IBM's Colour Graphics Adapter (CGA) standard gave PC pioneers 16 glorious colours and was the first common standard to step from the shadows of mono colour. The highest resolution in any mode was a blocky 640x200.

The PC 3D graphics market received a real kick-start with 3dfx's Voodoo 1 chipset, although 3D graphics meant having an add-in card as well as a standard VGA board and daisy-chaining the two. Quake arrived and the rest is history.

Intel pioneered the AGP slot to provide better bandwidth for graphics cards, without having to share the clogged PCI bus with other processing chores. The standard was an instant hit, surviving until the PCI Express era.

Though condemned as an architectural abomination, Nvidia's GeForce 2 was the first pixel-shading GPU, bringing 3D graphics into the mainstream and wowing with elaborate lighting techniques and clever filters.

AMD throws its hat into the ring with the Spider platform, which includes the first graphics card release since the company bought graphics specialist ATI, the Radeon HD 3800 series, and 7-series chipsets. The jury is still out.

1981

1996

1997

2000

2007



WD under fire over DRM policy

Digital rights management is about as popular as syphilis with computer users, yet top technology companies continue to build restrictions on how we use our media into hardware and software – and according to experts, it's getting worse.

Digital rights campaigners at the Electronic Frontier Foundation (EFF) say restrictions are set to rise as technology manufacturers feel they need to police what we do on the internet.

"There's been DRM in a lot of hardware for a while, but the amount of pressure to do DRM has been increasing as entertainment companies – particularly movie industries, but also other kinds of publishers – get more involved in creating proprietary standards that come with licensing conditions," said Seth Schoen, a technologist at the EFF.

"There is a trend and something to be worried about, because as devices get smarter, there's a lot more room to embed a very subtle policy that serves someone else's interests rather than the customer's."

The latest battle in this high-tech war erupted when web forum subscribers went up in arms over a Western Digital MyBook World Edition hard disk that employs third-party software from a company called MioNet to stop customers

transferring files such as MP3s, MPEGs and other media content over the internet.

However, the company's own description of the tool states that the software is designed to allow WD customers to access their WD hard disks remotely in order to use digital files "as if that content were stored local to the user".

The futility of the initial block was derided by users, particularly as it was easy to build work-arounds to beat the system, such as simply changing the file suffix.

Since coming under fire, Western Digital has said it might change its policy and lift the restriction, but not until it has consulted lawyers. "We wanted to take a very conservative approach," a company spokesperson said, citing a fear of legal action if customers used the drives in breach of copyright laws.

According to the EFF, that's a legitimate fear, but Schoen criticised the heavy-handed tactics that treated every customer as a potential criminal.

"There are lots of reasons to be sceptical about this," he said. "This is like a clumsy blanket ban that blocks traffic without knowing what it is."



◀ Secure storage is at the centre of DRM storm

Service pack aims to brighten Windows Vista

Windows Vista users should see improvements in power and performance with the release of Service Pack 1 (SP1) for the operating system, says Microsoft.

The release code is already in the public domain and the operating system's developer claims that tweaks to Vista – which is still struggling to supplant its predecessor, XP – should bring enhancements to several key areas.

The notable changes include faster data transfer, with the company promising a 25 per cent increase in speeds for copying files on the desktop, and 50 per cent faster file transfers between two computers both running Vista SP1.

Microsoft also promised that the spring-cleaned Vista will handle large image files more efficiently and integrate better with new features in Internet Explorer 7.

However, users should beware of installing the update when they need their computer working in tip-top condition. Microsoft claimed the installation will initially hamper performance because it overwrites earlier optimisation files. The process of retraining the optimisation suite should take "a few hours or days".

Vista SP1 RC can be downloaded from the Microsoft website.

Opera's familiar tune over Microsoft monopoly

In a bizarre case of *déjà vu*, Microsoft is due back in court over allegations that it is abusing its power and hampering rival web browsers by bundling Internet Explorer with Windows.

Opera, which produces a rival browser that also works on Windows, says it is calling on the European Commission to force Microsoft to unbundle Internet Explorer from Windows and/or carry alternative browsers pre-installed on the desktop.

"We are filing this complaint on behalf of all consumers who are tired of having a monopolist make choices for them," said Jon von Tetzchner, CEO of Opera. "In addition to promoting the free choice of individual consumers, we are a champion of open web standards and cross-platform innovation. We cannot rest until we've brought fair and equitable options to consumers worldwide."

Microsoft faced a similar legal battle in the US in 1998 over illegal competition that

eventually killed off rival browser Netscape. This time the battleground is in Europe, where Microsoft has already been scolded by the courts for tying its media player into its operating system.

"Our complaint is necessary to get Microsoft to amend its practices," said Jason Hoida, a lawyer for Opera. "The European Court of First Instance confirmed in September that Microsoft has illegally

tyied Windows Media Player to Windows. We are simply asking the Commission to apply these same, clear principles to the Internet Explorer tie, a tie that has even more profound effects on consumers and innovation."

However, Microsoft denies any wrongdoing.



◀ Opera might work with Microsoft's operating systems, but it's not a happy marriage

IN BRIEF

SPAM JAM

Junk email continues to clog the sinews of the web, with 19 out of every 20 emails (90-95 per cent) sent last year peddling Viagra or scams, according to figures from Barracuda Networks. The figure is up five per cent on 2006, the survey says, citing botnets as behind the increase.

DIY GOOGLE

Google is planning to go head to head with user-written encyclopedia Wikipedia with a new tool in its suite called Knol, which apparently stands for a unit of knowledge. The concept is similar to Wikipedia, with users contributing and editing the material in the knowledge base. However, contributors will be more accountable because their profile will appear alongside all entries.

GOVERNMENT ADMITS IT FAILURES

Prime Minister Gordon Brown has admitted the government has a "long way to go" on its IT strategy. He told a House of Commons committee that public and private firms had to come to terms with IT security issues and was then informed by parliament's IT body, Pitcom, that seven out of 10 projects had failed.

BROADBAND BALONEY

Ofcom's Consumer Panel has called for the Advertising Standards Agency to investigate misleading marketing by ISPs who sell services as "up to 8Mbit/s", when most customers have no chance of receiving such high speeds.

LEAN AND GREEN

Asus is pushing the green PC boundaries with a new prototype laptop encased in bamboo. The Eco Book, a fully specced, grown-up laptop, is wrapped in laminated bamboo which is both biodegradable and one of the fastest growing woods around.



IN BRIEF

SOCIAL BUTTERFLIES

Britons have embraced social networking sites more enthusiastically than any other European nationality, according to official figures from Ofcom. The communications watchdog says that four out of 10 UK adults regularly visit sites such as MySpace and LinkedIn, spending five-and-a-half hours networking each month and returning nearly every day.

G-WHIZ

The danger of relying on web-hosted mail was underlined recently when Google closed down hundreds of Gmail accounts in an over-enthusiastic attempt to thwart spammers. It fixed the problem fairly quickly, but emails that were bounced disappeared into the ether.



TAXING TIMES AHEAD

Music and film fans who pay for downloads and web phone addicts face price hikes when new tax regulations come into effect in 2015. The European Union plans to change the rules for VAT on electronics services so that duty is paid according to where the customer is based rather than the company.

This decision confounds the wheeze – used by Amazon, PayPal, Skype and others – of basing operations in Luxembourg, which has the lowest rates of VAT in the EU.

RADIOHEAD UNTUNED

The free legal music movement is in downbeat mood following Radiohead's decision to end its experiment of allowing fans to pay whatever they liked to download the album *In Rainbows*. Traffic monitoring site ComScore estimated that 62 per cent of downloaders opted to pay nothing, while other musicians criticised the giveaway as "demeaning music".



Piggybacking on the rise

More than half of all UK computer users are breaking the law by using other people's wireless internet connections without permission, according to a report by security company Sophos.

The report – which surveyed 560 people – found that 54 per cent of respondents believed that using someone else's WiFi connection was completely acceptable, and had checked emails or surfed the internet without paying the account holder.

"Stealing WiFi internet access may feel like a victimless crime, but it deprives ISPs of revenue," said Graham Cluley, senior technology consultant for Sophos, which produces software to block unwanted guests from your network.

"Hopping on to someone else's net connection and making downloads means you are slowing down their surfing and eating into their download limit. ISPs put a clause in their contracts ordering users not to share access with neighbours, but it's very hard for them to enforce this."

Piggybacking, or WiFi tapping as scaremongers prefer to call it, is illegal under the Communications Act 2003 and the Computer Misuse Act 1990, and anyone found guilty of freeloading faces a five-year maximum prison sentence. According to the *Times*, 11 people have been arrested for the offence in the UK.

However, a public groundswell has questioned the seriousness of the crime, believing that security firms, police and ISPs are merely promoting their own interests. Many people have used a fortuitously open connection to check email in extremis, and public opinion on web forums suggests the industry is out of kilter with its customers.



▲ Many people have used open networks to check email

Although some critics apply the letter of the law, philosopher Julian Baggini echoes many posters when he says: "I'm pro the stealers on this one, as it's doing so little harm. If you are doing it systematically to avoid chipping in your bit you are a freeloader and that's immoral, but occasional use while travelling is a bit like reading your book from the light coming out from someone's window."

Nevertheless, anyone worried about an unsecured connection – the ISP customer could, for example, pay the price if a piggybacker were to download child porn – should password-protect their access.

"It's essential that your WiFi connection is encrypted and that you have not chosen a password for your router which is easy to guess or crack," says Cluley. "The problem is that a lot of WiFi equipment is not properly configured when it comes out of the box, or is a headache to set up."

Dell hits the high street

Dell is to break completely from its policy of selling direct to its customers with a deal to sell its desktops and laptops through DSG, which owns high-street retailers Currys, Dixons and PC World.

The company, which has long sold its computers direct to customers in the UK, says its machines should be in stores within weeks.

So far it's unclear how this will affect consumers, and as we went to press Dell and DSG were tight-lipped as to how the pricing would work. It is unclear if DSG will have to add a mark-up, driving prices up compared with machines sold through Dell's website.

What is certain is that consumers like to try before they buy, and now they can see and touch the new hardware before parting with their cash. "With this agreement, consumers in Europe will have the chance to experience the look and feel of our products before purchasing," said Mark Ormerod, general manager for Dell's consumer business in Europe.

The move follows deals with Carphone Warehouse and Carrefour in Europe as Dell fights to keep up with high-street friendly rivals such as HP.

Breakthrough boffins give memory a boost

A new form of memory could lead to flash drives and mobile phone memory cards capable of storing terabytes of data, which is more than most desktops, when the technology emerges from the labs.

Researchers at Arizona State University say their new technology, catchily named programmable metallisation cell, could change the way we store media "within a couple of years".

"It's a radical technology," says Michael Kozicki, professor of electrical engineering at Arizona. "If we can make it work as well as everybody thinks it could, it could genuinely revolutionise the memory and storage industry."

New technologies are usually expensive, but Kozicki believes that because the memory could be built using existing manufacturing plants, and could be overlaid on to chips in a simple manufacturing process, it could quickly filter down into consumer electronics.

"In using readily available materials, we've provided a way for this memory to be made at essentially zero extra cost, because the materials you need are already used in the chips. All you have to do is mix them in a slightly different way," says Kozicki.

The scientists claim the chips could boost read and write speeds, improve capacity and prolong battery life in everything from phones to MP3 players and laptops.

Conventional computer memory has been heading toward a physical limit of how much storage can be crammed into a given space, because traditional electronics break down at the nanoscale of individual molecules. This is because forcing electronics closer together creates more heat and greater power dissipation.

"We've developed a new type of old memory, but really it is the perfect memory for what's going to be required in future generations," Kozicki says. "It's very low-energy and you can pack a lot of it into a small space."



Computers 'more wasteful than airlines', says report

Environmentalists point finger at PCs as major source of CO₂ emissions

Computers are worse than gas-guzzling 'Chelsea tractors' or the airline industry when it comes to CO₂ emissions, according to recent reports that suggest PC users are as guilty of contributing to global warming as those who jet off to Barcelona every other weekend.

The Inefficient Truth report, from Global Action Plan, says the growth in data centres that store personal details and webpages contributes a huge carbon footprint that is growing exponentially.

"ICT equipment accounts for three to four per cent of the world's carbon emissions, and 10 per cent of the UK's energy bill," said Trewin Restorick, director of Global Action Plan.

"We have only one server and that has roughly the same annual carbon footprint as a 4x4 doing 15 miles per gallon. With a carbon footprint now equal to that of the aviation industry, the way we use computers will increasingly come under the spotlight as governments seek to achieve carbon-cutting commitments."

Worse still, the report says that while air traffic pollution is growing by three per cent every year, the growth in the carbon footprint for computers and other communications kit is growing at an astonishing 48 per cent a year.

Another report, from Fujitsu Siemens Computers, says Britain's data centres, which store our online email, photos and personal details across 880,000 servers, produce 1.2 million tonnes of CO₂, which is generated unnecessarily due to poor power management. That's more than the total CO₂ output of a city the size of Norwich.

Whether it's in a data centre or in our homes, IT kit uses electricity, fills landfill sites and contributes to slag heaps of hazardous waste. Manufacturers are designing computers that contain less cadmium, lead and other killer materials, but there is only so far they can go.

It's difficult to gauge just how hard tech firms are striving for green credentials, because there is such confusion over what defines carbon-neutral computing. One source of information is Greenpeace's quarterly report, which names and shames IT's worst offenders and shows which manufacturers are improving, by using designs with less waste and implementing takeback schemes, for example.

The big question for IT companies is how much consumers really care. Would we be willing to pay higher prices for more efficient desktops to make the extra research and more expensive components worth the effort?

In the US, which normally anticipates UK trends, there are people who are willing to pay for the luxury of a clear environmental conscience, but they amount to only one in 10 of the population.

Forrester research suggests that the US market can be separated into three distinct sectors: 'bright greens', who are willing to pay extra, make up 12 per cent of respondents; 40 per cent are 'green' and share concerns over the environmental impact of computing, but don't want to pay for the privilege; while nearly 50 per cent couldn't give a flying front-side bus.

Tech companies, environmentalists say, will only ever spend money on researching green technology if they believe there is a market for it. Despite their efforts, the figures suggest there is not.



NEWS ANALYSIS

Computer consumers need more help to go green

There are lies, damn lies and statistics; for statistics, read figures for green computing. The sad truth is that if we want to know how environmentally friendly our new laptop or desktop really is, we need a degree in boffinity that most of us are unwilling to take.

The problem with buying a greener machine is that there are so many factors to consider, many of which are unpublished, that it's impossible to compare like for like.

Power consumption, disposability, hazardous waste content, life expectancy, manufacturing processes and working conditions are all important considerations, and yet there's very little information available.

Last year, the UK finally signed up to the WEEE directive that governs the disposal of computer waste, but does that absolve us from responsibility when it comes to buying consumer electronics?

No, especially when industry insiders have admitted to *Shopper* that cowboy traders are dumping Britain's e-waste rather than disposing of it properly.

Even if we had all the figures, would the decision be any easier to make? Does low power consumption count more, for example, than which hazardous materials are inside a monitor? That conundrum puts scientists in a twist, and we have no idea how long a machine will last before it dies.

PC manufacturers are making all the right noises about going green and are keen to home in on any differentiator that might persuade us to choose, say, Dell over Advent, but exactly how much of this is lip service remains open to debate. There are very few genuinely green machines on the shelves in the high street, despite headline-grabbing sound bites.

Some firms offer optional conscience-cleansers; for example, Toshiba operates a campaign whereby anyone who buys a laptop can pay an extra £1.18 to have a tree planted that should make the laptop carbon-neutral for its working life. Dell and PC World have similar options.

Chip manufacturers, too, have been making great strides in reducing power consumption in their processors (mainly because it also improves battery life and ensures cool running), but trying to find out exactly what the figures mean requires patience.

AMD chips appear to consume more power than Intel chips since the published values are higher, but AMD lists maximum power usage, while Intel refers to typical use. The two are not comparable and, despite the noise generated about power-efficient processing, according to Intel, the processor contributes a piddling five per cent to the total amount of power your computer uses.

The display typically eats nearly half the energy consumed, while the power supply unit simply wastes a choking 26 per cent of the juice that drains through your desktop.

In the Global Action Plan report (see left), director Trewin Restorick blamed the IT industry for being deliberately vague about the efficiency of its products. "[Consumers] need vendors to give them better information rather than selling green froth. They need government policies to become more supportive and less contradictory," he said.

Certainly we need standards to make comparisons between machines and vendors simpler. The Energy Star compliance system is helpful, but consumers need clearer guidance in shops and online.

"Consumers need to be able to compare goods, and labels are a useful information short cut," says Larry Whitty, chair of the National Consumer Council (NCC). "You wouldn't expect to buy a car without knowing how much petrol it consumes, yet shoppers will have little idea how energy-efficient a computer really is."

The NCC is calling on businesses and governments to bring in a simple colour-coded A-G labelling scheme based on the system currently in use for washing machines and fridges. Then manufacturers would really find out whether consumers care more about the price or the planet.



Stewart Mitchell
Correspondent

IN BRIEF

APPLE BITTEN

Security problems for Apple's iPhone are expected to get worse, according to a report from Arbor's Security and Engineering Response Team. The group predicts that hackers will employ drive-by attacks using malware embedded into seemingly harmless data, such as an image file, that unleashes a malicious payload when rendered in the iPhone's web browser.

MESSAGE RECEIVED

Another barrier to instant messaging between different services has fallen. Google Mail users will soon be talking the same language as chatterboxes on AOL's Instant Messenger (AIM). Google Mail subscribers can sign into AIM accounts in the same browser page and use it in conjunction with Google Talk. They can even use Google's conversation logs and contacts across both services.

POP-UP DOWNED

Surfers should be able to avoid unwanted smut following a US Federal Trade Commission edict banning AdultFriendFinder.com from showing x-rated pop-up adverts to unsuspecting surfers. The commission said the offending ads were "displayed to consumers who were searching online using terms such as 'flowers', 'travel', and 'vacations'... exposing consumers, including children, to sexually explicit images".

FLASH FLOOD AT TOSHIBA

The rise of flash memory continues with Toshiba's promise of a 128GB solid-state laptop this year. The drive, which uses stable NAND flash memory for storage rather than spinning magnetic discs, will come in three capacities: 32GB, 64GB and 128GB. Toshiba says the technology will mean faster start-ups, low power consumption and read speeds of 100Mbit/s.



E-crime could cost consumers dear

The growing problem of online crime – which last year prompted the Lords to describe the web as a "wild west" – could hit UK consumers in their pockets unless something is done to halt the rising tide of fraud.

According to security experts, the banks, shops and insurance companies that currently bear the risk and expense of online fraud are growing weary of government and police inertia.

"The banks are taking a lot of financial damage on these issues and so the crime ultimately is against the bank," said Danny Harrison, ID theft manager at security firm CPP. "Where it is ID fraud the banks foot the bill – and at what point are they going to say 'we won't pay'?"

"They don't know how careful you have been with your personal details – they can't prove whether you have divulged your PIN so they have to cover the costs."

According to card payment service APACS, web transactions accounted for 75 per cent of the £137 million losses from 'Card Not Present' payments in the first half of 2007, a figure that is growing at nearly 50 per cent a year.

Online banking fraud and phishing attacks accounted for another £15 million in the first half of

2007, while last year the Attorney General said online fraud was worth an estimated £1.6 billion and that this could be a serious underestimate.

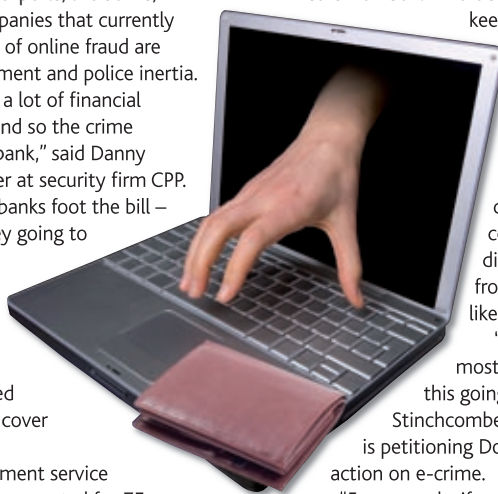
"There's a good chance that not all goes reported," said Harrison. "There's no way the banks are going to keep taking this because we are just

scratching the surface of this – as the ID fraudsters and people targeting companies get more sophisticated we'll find this is just the tip of the iceberg."

The lack of figures and controlled reporting measures could also mean consumers have difficulty claiming money back from insurance companies, which like to maintain a paper trail.

"If the police don't know about most of the problems, then how is this going to be dealt with?" said Neil Stinchcombe of Infosecurity Europe, who is petitioning Downing Street for tougher action on e-crime.

"For example, if a crime is committed against you, you need a police report to give to your insurance company to make a claim, but if it's online and there's no easy way of reporting a crime, then how do you pass the information on to your insurance company so they can make a swift payment?"



CRAZE What the web is really for

with Stewart Mitchell

Scrapbook challenge

It has a duller image than fruitcake-baking lessons at the Women's Institute, but scrapbooking has turned over a new leaf and is on the rise online.

On the way out are the dowdy images of gingham apron-toting *Listen with Mother* casualties bent over blank scrapbooks made of cheap paper, carefully glueing bus tickets, pictures and newspaper cuttings into garish collages.

These days the cutting and pasting is done in a browser window, and because the finished articles are stored online they can be inflicted on friends and family rather than being put to the more charitable use of protecting shelves from dust.

"OK, call me pathetic if you like, but I am embarrassed to say I am a scrapbook addict," says Jane Lester from Birmingham. "I use Gimp to make my scrapbooks and love being able to create what I want – I've just finished a really beautiful 'collage' of my sister-in-law's wedding for a desktop picture for her."

The craze is capturing the imagination on both sides of the Atlantic, and one of the biggest scrapper venues – Scrapblog, which has 250,000 members and includes a bevy of archivist-friendly software, digital stickers

and manipulation tools to create colourful compendia – has just landed a pile of investment capital from Steamboat Ventures.

"Scrapbooking is a growing industry that is quickly expanding online," said David Min, principal of Steamboat Ventures. "Scrapbooking tools are flexible and intuitive and let users create multimedia scrapbooks online using photos, video and audio as well as various creative elements."

The trend is riding on the coat-tails of Flickr and MySpace because anything created in a scrapbook can be exported to popular Web 2.0 applications to add pizzazz to personal pages.

Yet the arts and crafts ethos remains, and whichever scrapper site you visit there is a good chance you'll find recipes for biscuits among the templates and garish backgrounds.

"Creating a scrapbook online appealed to me, because I could easily share it with all of my friends and family," says Scrapblog regular Sarah M. "Each one of my scrapblogs represents a little piece of me... I'm very visual and I pay close attention to detail... I guess you could say I'm a 'more is more' kind of person."





First looks

Every month we bring you sneak previews of the latest kit from www.computershopper.co.uk

Vye mini-v S37

Ultra-portable laptops are usually very expensive, but Vye's 1.2kg mini-v S37 tablet PC costs just £800 including VAT. It's light and also very small, a similar size to a Filofax.

Unlike Asus's Eee PC, the mini-v is a fully fledged PC running Windows Vista Home Premium. There's also a generous 120GB hard disk. However, there's no optical drive, so you'll need to buy an external one if you plan to install additional software or watch DVDs.

Performance isn't brilliant. The mini-v scored just 38 in our benchmarks due to its slow 800MHz Intel A110 processor and 1GB of RAM. Still, for regular office and internet jobs, this is more than enough. Battery life was excellent at five-and-a-half hours.

The small keyboard feels quite cramped and is better suited to composing short emails than writing long documents. Using the touch pad is just as tricky. It's quite small and not that comfortable, but there's also a touch stick, which we found easier to use.

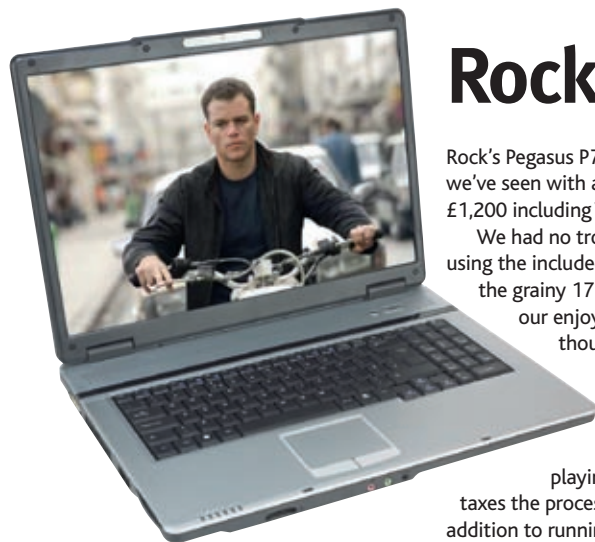
Even better, the 7in touch screen means you can use the supplied stylus to navigate through Windows

and use Vista's handwriting recognition instead of the keyboard. The screen also swivels 180° and folds flat against the keyboard, so you can use it in slate mode with pen-only input.

The screen has a resolution of just 1,024x600, so Vista can look a bit cramped and long documents can be difficult to read. In slate mode, however, you can hit a dedicated button to use the mini-v in portrait mode, making documents easier to read.

Bluetooth and WiFi are built-in, but there's no CardBus or ExpressCard slot for adding extras such as a 3G mobile card. There are two USB ports, a VGA connector and slots for SD, Memory Stick and CompactFlash memory cards.

The S37 is an impressively slender laptop and a real rival – in terms of size – to Asus's Eee PC. Read our full review in next month's *Shopper*.



Rock Pegasus P710-T7700

Rock's Pegasus P710-T7700 is the cheapest laptop we've seen with an HD DVD drive, at just under £1,200 including VAT.

We had no trouble playing HD DVD movies using the included PowerDVD software, although the grainy 17in widescreen display hampered our enjoyment. There's an HDMI port, though, so you can connect the Pegasus to a high-definition TV instead.

The Pegasus's battery lasted just 52 minutes while playing our HD DVD movie. Playback taxes the processor and graphics card heavily, in addition to running the optical drive constantly.

The Pegasus P710-T7700 fared better in our standard light-usage battery test, lasting two hours and 22 minutes.

You can easily store lots of photos, videos and music, thanks to the large 250GB hard disk. Performance is very good, too, with a quick Core 2 Duo T7700 and 2GB of RAM, which is more than enough for tough tasks.

Gamers will have to run games with reduced graphics settings and at lower resolutions, as the 256MB GeForce 8600M GS graphics chip managed only 14fps in our Call of Duty 2 test.

This is a powerful desktop replacement laptop and good value considering it has an HD DVD drive, but we'd expect a better display.

Brother HL-2170W

Brother's HL-2170W wireless mono laser printer isn't available until the end of January, but we've managed to get one early. The printer will retail for a similar price to Samsung's ML-1630: around £140 inc VAT.

While the HL-2170 isn't that stylish, it does have wireless networking built in, so you can print easily from anywhere in your home.

There's also a USB port for a direct connection.

Print speeds are impressive for a compact printer. Our standard correspondence quality letters were printed at 20ppm, which is just

below the advertised maximum speed of 22ppm. The quality of the lettering was sharp, and our initial greyscale image prints showed good contrast.

Print costs are an economical 1.5p per page if you buy high-yield toner cartridges. It has a replaceable drum, so you don't have to ditch the printer when the original wears out. Replacements cost £52 including VAT and last for around 12,000 pages.

We'll be reviewing the wireless HL-2170W in full next month. **CS**

